STEP SEVEN

When the vial is nearly full, tilt the vial to the vertical position to fill it completely. Avoid overflowing the vial too much because this could wash out the preservative.

STEP EIGHT

Carefully complete filling the vial to form a meniscus (the curved upper surface of a liquid formed by surface tension), or use the vial cap to top off the vial and form a meniscus.

STEP NINE

Screw the cap onto the vial with the Teflon side of cap liner face down, in contact with the water. Roll or shake vial to fully mix ascorbic acid. Carefully uncap vial and add 4 drops of HCL to the vial. NOTE: HCL may cause burns so use proper eye, hand, and clothing protection.

STEP TEN

Repeat steps six through nine using the second 40-ml vial.

STEP ELEVEN

Place vials in the foam container with the frozen chemical cold pack and the already filled "FIELD BLANK." Make sure there is some insulating material between the vials and the refrigerant pack. If you are not going to ship the sample within 24 hours, place samples in refrigerator and refrigerant pack back in the freezer.

STEP TWELVE

If you wish to have samples composited, fill out appropriate area on the laboratory form. Be sure to fill out a separate laboratory form for each source. See information below on compositing.

STEP THIRTEEN

When you are ready to ship samples, place sample vials, "FIELD BLANK," insulating material, frozen refrigerant pack, and the completed "chain of custody" and sample information forms into the foam container and ship to the laboratory within 24 hours.

COMPOSITING INFORMATION

The following restrictions are placed on compositing:

- You may ask the laboratory to composite samples from up to five sources.
- Well fields cannot be composited with any other sources.
- Groundwater sources cannot be composited with surface sources.
- Seasonal sources cannot be composited.
- Sources that are treated for DOH-regulated organics cannot be composited.
- Sources that have VOCs detected in the last five years cannot be composited.

If you have questions about sampling collection procedures, contact your regional office:

SW Regional Office:
Belle Fuchs or Donna Freier
(360) 586-5179

NW Regional Office:
Steve Hulsman
(253) 395-6777

Eastern Regional Office:
Anita Albi
(509) 456-2475

VOLATILE ORGANIC CHEMICAL (VOC) SAMPLING PROCEDURE

Washington State Department of Health
ENVIRONMENTAL HEALTH PROGRAMS
DIVISION OF DRINKING WATER

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DOH PUB #331-220

VOLATILE ORGANIC CHEMICAL (VOC) SAMPLING PROCEDURE

This brochure provides general information on how to collect a volatile organic chemical sample. Steps and procedures can vary depending on the laboratory that is used so you should follow the instructions that are provided by the laboratory you are using.

The analytical methods for VOCs call for the addition of preservatives to the vial prior to sampling. The testing laboratory will have pre-added proper preservatives to the vials. The preservatives include: ascorbic acid (Vitamin C) or sodium thiosulfate for neutralizing the residual chlorine; or hydrochloric acid (HCL), a biocide and pH adjustment for preservation and analysis. You may also need to add some preservatives at the time of sample collection.

Generally the sample kit contains:

- One or more chemical cold packs (i.e., blue ice)
- One 40-ml vial labeled “FIELD BLANK” filled with VOC-free water containing 25 mg ascorbic acid and 4 drops of 3 N HCL–DO NOT OPEN THE FIELD BLANK VIAL.
- Two 40-ml vials for each source to be sampled. Each vial may contain 25 mg ascorbic acid for dechlorination or 4 drops hydrochloric acid.
- One bottle containing 2 ml 3 N HCL with eye dropper
- Insulating material to protect vials from frozen refrigerant pack
- One sample information sheet for each source to be collected
- One extra 40-ml vial containing ascorbic acid

The general sampling procedure for VOC monitoring is as follows:

STEP ONE

Freeze the chemical cold pack before collecting samples.

STEP TWO

Locate a sampling tap that is after treatment (if present), but prior to entry to the distribution system. If collection is from a chlorinated source, the sample site should be far enough downstream from the site of chlorine injection to ensure that adequate mixing has taken place. If collection is from a non-chlorinated source, firmly hold the uncapped vial upside down and tap it to remove the ascorbic acid from the vial before filling.

STEP THREE

Remove any attachment from the tap such as hoses, filters, screens, or aerators.

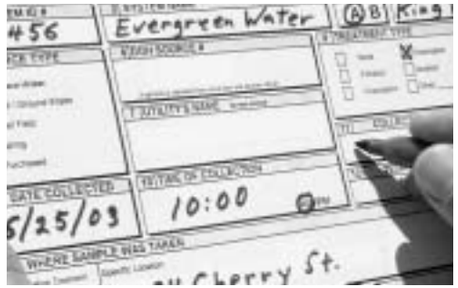
STEP FOUR

Flush the water for about 10 minutes or until the water temperature reaches a constant temperature.

STEP FIVE

While the water is running and before collecting the sample, fill out COMPLETELY the laboratory form and sample label. Laboratory forms vary, but the following information is very important to complete:

- Water System ID number
- Water System name
- DOH source number (i.e., S01)
- Sample type
- Collection date and time the sample was taken



- Sample location and sample purpose (usually “RC” for routine compliance)
- System type (i.e., Group A or B)
- Sample type (i.e., pre-treatment/ raw or post-treatment/finished)

STEP SIX

Reduce water flow, if possible, to a stream about the thickness of a pencil. Hold the vial at an angle and position

the vial under the edge of the stream of water so that the water flows gently into the vial along the inner sidewall (to reduce agitation and avoid introducing air bubbles).